WHAT IS CLAIMED IS:

    1.   A system for combining multi-spectral images of a scene, the system comprising:

    a channel for transmitting a scene image in a first spectral band;

    a detector for sensing the scene in a second spectral band, the detector having an image output representative of the scene;

    a display for receiving the image output and displaying a displayed image in the first spectral band;

    a collimator for receiving and projecting the displayed image; and

    a beam mixer for combining the transmitted scene in the first spectral band with the displayed image, and conveying the combined multi-spectral images to an output.

    2.   The system of Claim 1 wherein the first spectral band is visible light.

    3.   The system of Claim 1 wherein the second spectral band is in the infrared region.

    4.   The system of Claim 1 wherein the display is an active matrix display.

    5.   The system of Claim 1 further comprising a viewing system coupled to the output.

    6.   The system of Claim 1 wherein the representative output of the detector is an analog video signal.

7.   The system of Claim 1 wherein the representative output of the detector is a digital video signal.

8.   The system of Claim 5 wherein the viewing system is a night vision device.

9.   The system of Claim 5 wherein the viewing system is a camera.

10.   The system of Claim 1 further comprising a data port for transmitting the scene image to a remote source.

11.   The system of Claim 1 further comprising a data port for receiving information from a remote source or other modular instrument.

12.   The system of Claim 1 further comprising a data port for receiving information from a remote source and wherein the display is adapted to receive and display data from the remote source.

13.   The system of Claim 1 wherein the first and second spectral bands share a common aperture.

14.   The system of Claim 1 wherein the first and second spectral bands have separate apertures.

15.   The system of Claim 5 wherein the viewing system has an objective lens assembly and an image intensifier.

16. The system of Claim 5 wherein the viewing system has an objective lens assembly, an image intensifier and a viewing optics assembly.

17. A method for combining multi-spectral images of a scene, the method comprising:

receiving an image of the scene in a first spectral range at a detector;

generating a video representation of the image;

transmitting the video representation to a display;

generating a visual representation of the image at the display;

relaying the visual representation of the image;

receiving the image of the scene in a second spectral range;

combining the relayed image with the image in the second spectral range;

transmitting the combined images to an output; and

displaying the combined multi-spectral images of the scene.

18. The method of Claim 17 wherein the first spectral range is infrared.

19. The method of Claim 17 wherein the second spectral range is in the visible region.

20. The method of Claim 17 further comprising amplifying the combined images with an image intensifier system.

21. The method of Claim 17 further comprising transmitting the visual representation of the image to a data port.

22. The method of Claim 17 further comprising superimposing data on the combined multi-spectral images of the scene.

5   23. The method of Claim 17 wherein the relaying step comprises collimating the visual representation of the image.

       24. The method of Claim 17 further comprising the
10   step of processing the video representation of the image.

25. A method for combining multi-spectral images of a scene, the method comprising:

receiving an infrared (IR) image of a scene at an infrared detector;

generating a representation of the IR image;

transmitting the IR image representation to a display;

generating a visual representation of the IR image at the display;

collimating the displayed IR image;

combining the collimated IR image with an image of the scene in a second spectral region;

transmitting the combined images to an intensifier system operable to intensify images in the second spectral region; and

displaying the combined images of the scene.

26. The method of Claim 25 wherein the second spectral region is visible light.

27. The method of Claim 25 wherein intensifier system is a night vision goggle.

28. The method of Claim 25 wherein the IR image is received at a first aperture and the image of the scene in the second spectral region is received at a second aperture.

29. The method of Claim 25 wherein the visual representation of the IR image is displayed at an external viewer.

30. The method of Claim 25 further comprising transmitting the visual representation of the image to a data port.

5   31. The method of Claim 25 further comprising superimposing data on the combined multispectral images of the scene.

32. The method of Claim 25 further comprising

10   processing the IR image representation.

33. A system for combining multi-spectral images of a scene, the system comprising:

a viewing system for viewing the scene in a first spectral range, the viewing system having an objective lens and viewing optics;

a detector for viewing the scene in a second spectral range, the detector having an image output representative of the viewed scene;

a display for receiving and displaying the image output;

a collimator for receiving and projecting the displayed image; and

a beam mixer for receiving the viewed scene in the first spectral range and the displayed image and conveying both images to the viewing system to construct the combined multi-spectral images of the scene.

34. The system of Claim 33 wherein the viewing system further comprises an image intensifier.

35. The system of Claim 33 wherein the first spectral range is visible light.

36. The system of Claim 33 wherein the second spectral range is in the infrared band.

37. The system of Claim 33 wherein the display is an active matrix.

38. The system of Claim 33 wherein the viewing system is a night vision device.

39. The system of Claim 33 wherein the representative output of the detector is an analog video signal.

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40. The system of Claim 33 wherein the representative output of the detector is a digital video signal.